

Code	Semester	Course category	Title of the Paper	No. of Credits	HPW	Max. Marks			Total Marks
						I.A	End Exam	Total	
FIRST YEAR									
BS104	I	DSC-1A (Theory)	Biomolecules	4	4	20	80	100	125
		DSC-1A (Practical)		1	2	-	25	25	
BS204	II	DSC-1B (Theory)	Bioenergetics and Enzymology	4	4	20	80	100	125
		DSC-1B (Practical)		1	2	-	25	25	
SECOND YEAR									
BS304	III	DSC-1C (Theory)		4	4	20	80	100	125
		DSC-1C (Practical)		1	2	-	25	25	
BS404	IV	DSC-1D (Theory)		4	4	20	80	100	125
		DSC-1D (Practical)		1	2	-	25	25	
THRID YEAR									
BS503	V	DSC-1E (Theory)		3	3	15	60	75	100
		DSC-1E (Practical)		1	2	-	25	25	
BS506		DSC-1E (Theory)		3	3	15	60	75	100
		DSC-1E (Practical)		1	2	-	25	25	
BS603	VI	DSC-1F (Theory)		3	3	15	60	75	100
		DSC-1F (Practical)		1	2	-	25	25	
BS606		DSC-1F (Theory)		3	3	15	60	75	100
		DSC-1F (Practical)		1	2	-	25	25	
Summary of Credits				36	-	-	-	-	900

Ummadevi

DEAN
FACULTY OF SCIENCE
KAKATIYA UNIVERSITY
WARANGAL-506 005 (A. P.)

**B.Sc. BIOCHEMISTRY (CBCS STRUCTURE)
Paper-1 BIOMOLECULES(THEORY)
SEMESTER-I**

TOTAL HOURS: 60

**CREDITS: 4
MAXIMUM MARKS: 80**

Unit I: Carbohydrates

- 1.1. Monosaccharides - structure of aldoses and ketoses, ring structure of sugars, conformations of sugars, mutarotation, anomers, epimers and enantiomers,
- 1.2. Structure of biologically important sugar derivatives, oxidation of sugars. Formation of disaccharides, reducing and nonreducing disaccharides.
- 1.3. Polysaccharides – homo- and heteropolysaccharides, structural and storage polysaccharides.
- 1.4. Structure and role of proteoglycans, glycoproteins and glycolipids (gangliosides and lipopolysaccharides). Carbohydrates as informational molecules.

Unit II: Lipids

- 2.1. Lipids – classification and general properties of lipids.
- 2.2. Fatty acids, glycerol, ceramide; Storage lipids - triacyl glycerol and waxes.
- 2.3. Structural lipids in membranes – glycerophospholipids, galactolipids and sulpholipids, sphingolipids and sterols. Structure, distribution and role of membrane lipids.
- 2.4. Lipids as signals and cofactors. Eicosanoids-structure & functions.

Unit III: Amino acids and Proteins

- 3.1. Structure and classification, physical, chemical and optical properties of amino acids.
- 3.2. Naturally occurring peptides. Outlines of protein classification.
- 3.3. Structural organisation of proteins. Protein denaturation and renaturation.
- 3.4. Proteolytic enzymes. Outlines of protein sequencing.

Unit IV: Nucleic acids

- 4.1. Nucleotides - structure and properties. Nucleic acid structure – Watson-Crick model of DNA.
- 4.2. Structure of major species of RNA - mRNA, tRNA and rRNA.
- 4.3. Nucleic acid chemistry- UV absorption, effect of acid and alkali on DNA.
- 4.4. Functions of nucleotides - source of energy, component of coenzymes, second messengers.


DEAN
FACULTY OF SCIENCE
KAKATIYA UNIVERSITY
WARANGAL-506 009 (A. P.)

CORE-1: BIOMOLECULES (PRACTICALS)
SEMESTER – I

Marks: 25

CREDITS : 1

1. Qualitative analysis of carbohydrates.
2. Qualitative analysis of amino acids and proteins.
3. Qualitative analysis of lipids.
4. Preparation of solid derivatives of monosaccharide – osazones.
5. Determination of total Carbohydrate content in cereal by anthrone method.
6. Estimation of amino acids by formal titration.
7. Estimation of ascorbic acid from biological samples by titrimetric method.
8. Determination of iodine value of a lipid.
9. Determination of saponification value of a lipid.
10. Estimation of Calcium from milk.

SUGGESTED READINGS

1. Lehninger: Principles of Biochemistry (2013) 6th ed., Nelson, D.L. and Cox, M.M., W.H. Freeman and Company (New York), ISBN:13: 978-1-4641-0962-1 / ISBN:10:1-4292-3414-8.
2. Textbook of Biochemistry with Clinical Correlations (2011) 7th ed., Devlin, T.M., John Wiley & Sons, Inc. (New York), ISBN:978-0-470-28173-4.


DEAN
FACULTY OF SCIENCE
KAKATIYA UNIVERSITY
WARANGAL-506 009 (A. P.)

SCHEME OF QUESTION PAPER

**B.Sc (Faculty of Sciences) I/II/III/IV Semester
I-Internal Assessment Examination*
Code: Name of the Paper
(Under CBCS Scheme)**

Time: 90 Min]

[Marks: 20

Answer ALL questions.

1. Assignments and Attendance ---- 5M
2. Multiple Choice Questions – 5M (one mark for each question for five questions)
3. Fill in the blanks – 5M (one mark for each question for five questions)
4. Match the following --- 5M (one mark for each question for five questions)

SCHEME OF QUESTION PAPER

**B.S (Faculty of Sciences) I/II/III/IV
II – Internal Assessment Examination*
Code: Name of the Paper
(Under CBCS Scheme)**


Time: 90 Min]

[Marks: 20

Answer ALL questions.

1. Assignments and Attendance ---- 5M
2. Multiple Choice Questions – 5M (one mark for each question for five questions)
3. Fill in the blanks – 5M (one mark for each question for five questions)
4. Match the following --- 5M (one mark for each question for five questions)

**The internal marks will be calculated on the average of two internal tests*


DEAN
FACULTY OF SCIENCE
KAKATIYA UNIVERSITY
VARANGAL-505 009 (A. P.)

B.Sc (Faculty of Sciences)
CBCS Pattern in Semester System (*with effect from 2016-17*)
SCHEME OF QUESTION PAPER

B.Sc (Faculty of Sciences) I/II/III/IV Semester
KAKATIYA UNIVERSITY, WARANGAL

Code: Name of the Paper
(Under CBCS Scheme)

Time: 3 Hours]

[Marks: 80

SECTION-A: SHORT ANSWER QUESTIONS (8 x 4 = 32)

Answer any 12 questions from Unit-I

1. From Unit-I
2. From Unit-I
3. From Unit-II
4. From Unit-II
5. From Unit-II
6. From Unit-III
7. From Unit-III
8. From Unit-III
9. From Unit-IV
10. From Unit-IV
11. From Unit-IV

SECTION-B: ESSAY TYPE ANSWER QUESTIONS (4 X 12 = 48)

Answer all questions

1. (a) From Unit-I
OR
(b) From Unit-I
2. (a) From Unit-II
OR
(b) From Unit-II
3. (a) From Unit-III
OR
(b) From Unit-III
4. (a) From Unit-IV
OR
(b) From Unit-IV


DEAN
FACULTY OF SCIENCE
KAKATIYA UNIVERSITY
WARANGAL-506 009 (A. P.)